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contents

Summer 2021 | Issue 2 | Vol. 25

- 04 Comment**
The Future of Snacks
- 06 News**
Highlights of Business Moves, Market Trends, New Launches, and Research
- 10 Technology**
Extending the Lifespan of Bakeware Coatings
- 12 Technology**
Rademaker's Donut Sheeting Technology: Efficient, Hygienic, Flexible
- 16 Technology**
Choosing Conveyor Belts for Food Safety
- 18 Process**
Inspection and Monitoring: An Investment for the Future
- 20 Ingredients**
Oils, Fats and the Health Trend
- 22 Research**
Food Allergen Management: What to Know About the Codex Code of Practice
- 26 Packaging**
Advances in Environmentally Friendly Polymers for Food Packaging
- 28 Snacks**
China's Bakery Sector Enjoys Unparalleled Growth Potential
- 32 Markets**
South East Asia Takes a Chance on Premium

20

INGREDIENTS

Oils, Fats and the Health Trend





The Future of Snacks

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Changing priorities among consumers mean flavor innovation alone, is not enough to sustain their interest and convince them of purchasing a snack anymore.

Tudor Vintiloiu

Consumer lifestyles drastically changed as a result of COVID-19. We witnessed an increase in trends like the growth of e-commerce channels, a higher focus on the online world overall, rising health concerns and increasing product development designed to address consumer demands in their homes; while at the same time seeing a slowdown for market trends such as on-the-go consumption and impulse purchases. Both shifts are reshaping the future of snacks. Traditionally, snacks purchases have been characterized by a sensory component, more so than any other packaged food products. Consumer demand is typically more driven by concepts such as visual appeal, impulse exposure and a sense of indulgence over the nutritional value of the product. This has provided room for investment in product development in dynamic categories such as confectionery and savory snacks. One of the key factors which has enabled players to sustain innovations and attract consumers' interest throughout the years has been flavor. However, changing priorities among consumers mean flavor innovation alone, is not enough to sustain their interest and convince them of purchasing a snack anymore. Instead, they increasingly want a holistic experience from their snacks. According to Euromonitor International's Lifestyles Survey, at least 40% of respondents in the youngest generations globally seek tailored experiences. According to Euromonitor, innovation towards lighter, thinner and crispier textures will be key elements of sweet snacks as consumers' desires to stay healthy, but also be able to indulge in treats, becomes more popular. There is still room for development in the visual appearance of snacks to convey a healthier image by leveraging an ingredient's unique and natural color. Different shapes can also appeal to consumers' desire for something exciting, which can be amplified by visual content on social media. Beyond innovation of the product, snacks need to continue to deliver a holistic experience; something which can be achieved by bringing entertainment to the home. •



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Angel Yeast Announces Acquisition of Bio Sunkeen

Angel Yeast Co., Ltd has recently announced it has established a joint venture company to invest RMB100m (USD15.4m) to acquire Shandong Bio Sunkeen Co, Ltd. In doing so, the company seeks to optimize its production capacity and further consolidate and strengthen its position in the industry.

Angel Yeast has partnered with Shandong Lufa Holding company to establish Angel Yeast (Jining) Co., Ltd. Angel Yeast (Jining) will acquire the relevant assets of Bio Sunkeen's yeast production, while simultaneously transforming and upgrading its technological capabilities. "Angel Yeast will utilize Bio Sunkeen's existing facilities, with further expansion plans in the future. This joint venture project is in line with Angel Yeast's 2025 strategy focusing on yeast biotechnology, nutrition and health products, and food ingredients," said Chen Hongwei, general manager of Angel Yeast (Jining).



Azelis Diversifies Presence in South Korea Through Acquisition of Leading Distributor MH

Azelis, a leading global innovation service provider in the specialty chemical and food ingredients industry, announces the acquisition of MH in South Korea, a reputable local distributor in the food ingredients market. Azelis' already strong presence in the personal care market will be complemented by MH's foothold in these new market segments. Laurent Nataf, CEO & President of Azelis Asia Pacific, added: "As Azelis already has a solid food presence in other countries in Asia Pacific, this new acquisition will further improve our food footprint in the region. This in turn opens up the opportunity to expand our lateral value chain for food in South Korea and to attract new mandates from Azelis' Asia-Pacific food & health principals. Our presence in South Korea has been predominantly in personal care until now, so this acquisition also provides excellent complementarity and diversification into the food market."

DKSH Opens First Innovation Center for the Food and Beverage Industry in Korea

DKSH has further strengthened its Performance Materials business in Korea by opening a new state-of-the-art innovation center for the food and beverage industry. The new innovation center is located in Seoul, is fully-equipped and caters to the growing demand for technical support for food and beverage applications in Korea.

The facilities play a vital role in developing new concepts, products, formulations and technologies for food and beverage applications. DKSH's technical specialists develop solutions and formulations tailored to local market needs and help companies reduce time-to-market and increase competitive advantage.

Cesar Saez, vice president Global Food & Beverage Industry, Performance Materials, DKSH, commented: "We are



delighted to open our first food and beverage innovation center in Korea. Food companies in this market will greatly benefit from our innovation and formulation services, particularly in the absence of their own research and development capabilities. Our centers are always strategically located in close proximity to our customer base in order to foster stronger collaboration. Together, we drive solutions to cater to the specific local palates across Asia Pacific."

Cargill to Build USD200m Sustainable Palm Oil Refinery in Indonesia

Cargill is building a new USD200m palm oil refinery in Lampung, Indonesia, which will accelerate Cargill's efforts to develop a sustainable palm supply chain and provide verified deforestation free products to customers. The new refinery will play a key role in connecting sustainable crude palm oil production in Indonesia to demands in North America and Europe through a fully integrated supply chain from plantation to customer.

Construction of the new facility has commenced and operations are expected

to be completed in late 2022.

"This project is a key step for Cargill to increase the availability of sustainably sourced and produced edible oil ingredients for our customers, helping Cargill to fulfil its purpose to nourish the world safely, responsibly and sustainably," said Robert Aspell, President of Cargill Asia Pacific. "In addition, this fully integrated supply chain offers our customers assurance that stringent production requirements and the highest product quality are achieved."



Almarai Expands Stake in Bakery Business in USD40m Deal

Saudi-based Almarai, through its Western Bakeries Company unit, has bought an additional 15% stake owned by Olayan Financing Company in Modern Food Industry (MFI), which is known for its long shelf-life pastries under the brand name “7Days.” The transaction totaled SR150 million (USD39.9m), according to a recent stock exchange filing. A bumper year of sales and an increased focus on food security in the wake of the coronavirus pandemic is encouraging a wave of merger and acquisition activity across the booming regional food industry. MFI was established in 2009 as a joint venture between Almarai and the Saudi conglomerate Olayan Group. It is known for its sales and manufacture of packed croissants, swiss rolls, and cake bars.



Azelis Signs New Distribution Agreement with Roquette to Expand in China

Azelis announced it has increased the scope of its distribution agreement with Roquette for their food product range in China. Azelis has a long-standing relationship with Roquette and this new partnership strengthens Azelis' lateral value chain and expands its significant presence in the food & health market segment across Asia Pacific, with the addition of Roquette's specialty products, including fibers, plant-derived proteins and both modified and native functional starches.

Azelis' ability to provide scale, technical expertise, formulation capabilities and market knowledge, were critical factors in Roquette's decision to enter into this distribution agreement.

Jackson Chu, Azelis Managing Director China, comments: “Building on our long-standing global partnership with Roquette, this distribution extension is a



testimony to their belief in Azelis' ability to further develop their business and create new opportunities through our deep knowledge of the food market in China and technical sales capabilities. Roquette's range of high-quality plant-based ingredients are complementary to our overall portfolio and our core values of providing sustainable ingredients and innovative solutions to our partners.”

ISM Expands in APAC with Japan Edition



ISM, the world's largest trade fair for sweets and snacks, is set to celebrate its Asian debut in Tokyo, Japan in the heart of East Asia. The new trade fair will be staged between April 13-15, 2022 at the Tokyo Big Sight under the name ISM Japan and will serve as the information, communication and networking hub for the industry in the region. ISM Japan is the first trade fair of its kind in Asia and is oriented on the role model of the world's largest trade fair for sweets and snacks – ISM in Cologne. The premiere, at which over 200 brands are awaited, reflects the global leading role of Koelnmesse in the sweets and snacks industry as well as in the food and beverage industry. Together with its six partner trade fairs, ISM Japan is set to attract over 1,000 exhibitors and just under 80,000 trade visitors from Asia and East Asia.

Limagrain Ingredients Launches Fiber-rich Wheat Flour

Limagrain Ingredients has launched a new fiber-rich wheat flour called LifyWheat that “helps fill the fiber gap,” according to the company. The white wheat flour is reportedly ten times richer in fibers than standard fibers and contains resistant starch. Two decades in the making, LifyWheat allows for an increase in cereal products' fiber content “without any compromise on taste texture or diet habits.”

The ingredient will make it easier to formulate tasty fiber-rich products and furthermore bring specific health benefits not just related to the amount of fiber but also the type of fiber beneficial for gut health. LifyWheat white flour contains 10 times more fibers than common white wheat flour. With 25% fibers compared to 2.5% in a standard wheat. This means that replacing e.g. 60% of standard white flour with LifyWheat flour in a white sandwich loaf will result in a three to five fold increase in resistant starch. The result is a white bread rich in fiber. Thanks to its high content of resistant

starch, LifyWheat can replace part of the digestible starch and thereby contribute to reduce the after-meal blood sugar response.



Corbion Solution Delivers Consumer-friendly Dough Conditioning

The latest addition to the company's Pristine range enables bakers to overcome common quality hurdles such as wheat protein inconsistencies and high-speed processing without relying on gluten supplementation and traditional solutions like DATEM.

Bakers have long been challenged by two seemingly contradictory priorities:

1) deliver the consistent product quality consumers expect in spite of fluctuating gluten levels in wheat flour and the demands of high-speed manufacturing lines, and

2) remove artificial-sounding ingredients, such as DATEM (diacetyl tartaric acid ester of monoglycerides), which many shoppers want to avoid.

Now global ingredients leader Corbion is expanding its Pristine range with a new consumer-friendly dough strengthening solution that lets them accomplish both at the same time.

New Pristine 3000 is Corbion's most robust dough conditioning innovation yet, allowing bakers to create dough with the overall strength and tolerance needed to stand up to today's high-speed commercial processing.



THAIFEX – ANUGA ASIA to Reschedule In-person Event for May 2022

Considering the current situation in Thailand and believing that the health is the most important thing above all else, the organizers have decided to reschedule THAIFEX – ANUGA ASIA 2021 "The Hybrid Edition", the on-ground event and to focus more on all online activities this year.

The in-person event will now take place between May 24 – 28, 2022 at IMPACT Muang Thong Thani, Bangkok, Thailand.

In the interim, THAIFEX – ANUGA ASIA will be focusing on THAIFEX – Virtual Trade Show (www.thaifex-vts.com), which is scheduled to run the Online Business Matching (OBM) and all virtual activities from this day onward and the big event will be on September 29 – October 03, 2021.

The organizers also announced that THAIFEX – ANUGA ASIA is planning to stage a couple of exclusive business matching events towards the end of 2021 to assist the exhibitors who are seeking to meet Thai Buyers. More information will be provided in the next few weeks.

IPCO's New Cooling Tunnel Puts Focus on Hygiene and Sustainability

IPCO has recently announced the development of an innovative new cooling tunnel. Combining exceptional energy efficiency provided by a unique airflow



system with the hygienic qualities of a highly accessible, all-stainless steel design, the tunnel has applications in both the confectionery and bakery industries.

The system can be designed with direct, indirect or impingement airflows, with a bottom cooling option also available. Airflow has been designed for maximum efficiency to deliver rapid, controlled cooling and significantly lower energy consumption than comparable lines.

Designed as an efficient, single pass process, IPCO's new line can be equipped with stainless steel or plastic belts in standard widths of 1500 mm or 2000 mm, with other sizes available. The length of the tunnel can be designed around specific customer needs. Other features include belt alignment and safety systems, and the tunnel is supplied in modular form with all electrical equipment ready for connection, enabling fast installation and commissioning.

ATS Acquires Conveyor Systems Manufacturer NCC Automated Systems

ATS Automation Tooling Systems Inc., an industry-leading automation solutions provider, recently announced it has acquired NCC Automated Systems, Inc., a provider of engineered-to-order sanitary automation solutions and stand-alone precision conveyance equipment for USD40m, subject to customary post-closing adjustments. ATS has funded the acquisition by drawing on its revolving credit facility.

"The acquisition of NCC expands our portfolio of precision conveyor technologies through the addition of adjacent and complementary products to ATS' SuperTrak, addressing an important pillar of ATS' automation products strategy while enhancing our position in the food and beverage end-market," said Andrew Hider, CEO of ATS. "NCC's strong design software toolkit also allows us to play a more holistic role in supporting the needs of our customers from the design phase through to implementation by bridging the connection between the design engineer and manufacturing operator."





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Extending the Lifespan of Bakeware Coatings



Industrial bakers are in constant quest of a better utilization rate of their production lines, including the reduction of downtimes, reduction of production loss and increased capacities. Non-stick coatings on baking trays are known to have a limited lifetime, depending on many aging parameters, such as temperature and mechanical wear (abrasion).

By Tudor Vintiloiu

Aging parameters are mainly mechanical abrasion, temperature, residues and ingredients. In an ideal world, if the equipment could achieve smoother motions (especially when depanning), if baking would be done at the lowest acceptable temperature, if the residues would be removed and abrasive ingredients avoided, the non-stick could last forever. The reality is a smart compromise. Amongst industrial bread producers, the lifetime of the same non-stick coating applied on the same tray can vary greatly depending on the operating parameters. How should coating types be chosen, according to products manufactured and manufacturing equipment/processes? Given that there are so many the factors to be considered, 'there is no one-size-fits-all solution,' according to bakeware specialist Kempf. This is a case where the line and product manufacturer must decide together. Characteristics of silicone rubber coatings include:

- Heat resistance up to 300°C;
- Hygroscopic properties;
- Non-stick and anti-slip properties: often important to avoid that frozen products move and fall from the trays while being moved on the line;
- Only for baking trays.

This coating is very popular on convoluted trays for the production of crusty products, such as baguette; it can also be used on

flat trays for crusty products.

Fluoropolymers have the following benefits:

- High abrasion and heat resistance;
- Great cost/benefit ratio;
- Extended release life;
- Improved sanitation;
- Many customized solutions, according to the products and process, but also the customer's budget.

In heavy duty environments, typically the use of non-stick coatings on automatic baking lines for bakery and pastry, the progressive loss of non-stick characteristics of the baking trays will first engender production losses, which can be massive until the replacement the trays by new or renovated ones. This is why monitoring ensures timely replacement, in addition to optimizing production uptimes and ensuring process safety.

Non-stick coatings are a risk for bakers since they are in direct contact with bread or pastry that will eventually be eaten by humans. Hence, beyond the fact that a non-stick coating should not engender production losses or should not need regular replacement, it should give an absolute guarantee of food-grade quality. Throughout their use, coatings can be monitored visually (eye or camera). Once the coating has disappeared from the metal plate or once the product starts sticking, you replace it. Alternatively, there are tracking systems than can read codes printed or engraved on the baking

tray for measuring the quantity of baking cycles achieved by the trays. It is useful for preventive maintenance i.e. for removing the baking tray before its theoretical end of life. On average, i.e. with standard products and standard production parameters, a non-stick coated baking tray can withstand 3,500 baking cycles.

SASA Demarle is a company that has a wide range of baking trays, coatings and equipment adapted to meet baker's requirements. Ranging from the artisanal needs to the industrial baker's needs. SASA has introduced a new silicone formula, called INF6001 from SASA's iNFInium® quality label for coating. The new INF6001 has an extended lifespan of up to 5,000 baking cycles.

SASA Demarle's representatives say the INF6001 silicone is a very versatile non-stick coating material. It is perfectly suited for baking crusty bread, brioche and any kind of sugary products, as it can fit not only channeled trays for baguette but also tins or stamped trays successfully. Since it is sprayed by robots, as long as the robot is properly programmed, it can fit any shape of baking tray. What makes INF6001 silicone very specific, compared to other families of non-stick coatings, is its anti-slip characteristic. It will keep the product in place on hi-speed lines even on opened or flat trays, enabling the perfect stability and repeatability of the production.

"As far as utilization guides, first of all, we offer a decision matrix which is a table showing what the most suitable coating is for a certain type of products. However, this is far from enough for selecting the right coating. We have a team of very skilled technical and sales persons, backed by our chemists, who can make more specific recommendations. Last but not least, we make field tests with our clients to validate the coatings," SASA's specialists told us. Coatresa, an expert in non-stick solutions for baking products, offers a range of non-stick coatings for industrial bakers under the brand Testrong®.

"Our R&D is focused on developing new systems to achieve top performances and

We have a team of very skilled technical and sales persons, backed by our chemists, who can make more specific recommendations. Last but not least, we make field tests with our clients to validate the coatings.

ensure the highest durability in the industry. Some examples of our latest developments are: Higher non-stick properties for glazed products and extra abrasion resistance for seeded or toasted products. Coatresa also supplies bakeware specially designed to improve and optimize bakers' throughput and to maximize the coatings' performance", said Georgina Marin, CMO of Coatresa, and Eduard Castaño, VP of Marketing&Business Development. They added that their unique selling point has to do with their service and their choice of environmentally friendly solutions. "Most of our systems are solvent free and with our Testrong coatings, no oil, grease, or release agents are required for the product depanning".

According to the company, at Coatresa, the main interest is for custom made items. "In fact, that is our strength: be flexible enough to partner with a client during all the process. From the product design, until the baked good is ready to be eaten in the client's home. We can work from a regular sliced bread to make UK's favorite breakfast, all the way to a bunny shape bun for Easter. Regarding coatings, our most popular products are our star coatings Testrong® Pyros for bread pans and Testrong® ROC for burger trays, both operate without requiring any release agent on the production process," stated Georgina Marin and Eduard Castaño.

When discussing upcoming trends, the specialists believe a focus towards more sustainable solutions is essential: "Although it seems that bakeware has not evolved, during last years, small innovations have made a huge change. The trend for the future will be to move on to more sustainable systems: recoating vs. new, interchangeable parts to expand trays life. In coatings field, healthier products are becoming more and more popular so new formulations will require new coatings systems", Marin and Castaño concluded. •



*SASA Demarle
specialists*

*Georgina Marin,
CMO of Coatresa,
and Eduard
Castaño, VP of
Marketing&Business
Development*



Most of our systems are solvent free and with our Testrong coatings, no oil, grease, or release agents are required for the product depanning.



Rademaker's Donut Sheeting Technology: **Efficient, Hygienic, Flexible**

Even if the donut was originally something like a breakfast pastry, consumers do no longer see it like this. Nowadays, donuts are sold around the day in supermarkets, bakeries or donut specialty shops. The industry's responds to this by introducing donuts with new taste profiles, for example intended to seduce consumers into eating a tasty donut as an afternoon snack or an after-dinner indulgence.

By Rademaker



The combination of unique taste profiles has resulted in donuts with non-traditional stuffing. Worldwide best-selling examples of this are donuts with flavours like Snickers, custard, banana malt, espresso-cardamom and clove poached pear. In addition, consumers are looking for donuts which fit in their diet requirements, for example gluten-free or vegan donuts or donuts with sugar substitutes. If, as a result of the increasing worldwide focus on healthier food, consumers wish to eat comfort food, this must be of the highest quality. It must be more than a 'stomach filler'. Whatever the prevailing trend: the golden rule is and remains that people will buy donuts mainly because of their taste. The topping, the donut type and the packaging are secondary. At the same time, freshness is increasingly important for consumers. For the production of fresh donuts with a great taste with sufficient shelf life for consumers, the selection of sound ingredients, with a constant performance, irrespective of factors like temperature and handling method, is increasingly important. 'Fresh' works for everybody, because high-quality donuts have a longer shelf life, are more profitable and bring more satisfaction for both seller and consumer.

TWO TYPES OF DONUTS

Generally speaking, there are two types of donuts. For the cake donut, a chemical rising agent is used, for example baking soda or baking powder. This has the advantage that the base mix of flour, milk or water, salt, sugar, sometimes eggs and baking soda or baking powder, will not take time to rise. It can be mixed, formed and fried at once. Mostly, cake donuts are prepared as batter. It is then important to drop them carefully into hot oil. It is also possible to prepare cake donuts as dough. Then they can be rolled and shaped into rings or rolled out flat and cut into the desired shape. In addition, compared with the yeast donut, frying a cake donut does not take long. The drawback is that they absorb more oil than yeast donuts. The final result is crumbly and dense, with a crispy surface. After frying, they are mostly consumed immediately. Most donuts available in American shops are yeast donuts. It is characteristic for this donut that the base dough consists of flour, sugar, salt, water or milk, possibly eggs, possibly butter or oil, and yeast. This

base dough is mixed, sometimes kneaded, and will be given the time to rise for a few hours. Sometimes, corn starch or potato starch is added, which makes the inside of the donut lighter. The dough is then rolled out and cut and again given time to rise before every pre-shaped ring is carefully put into the hot oil. The finished, fried donut rings have a fluffy texture and a thin, soft golden-brown crust.

THE DONUT PRODUCTION PROCESS

Looking more closely at the production process, there are a few methods for producing donuts.

- Making a donut by depositing (cake donut). For this process, a special type of batter is used. After being spotted, the ring is immediately fried. After cooling, the donuts can be glazed, decorated and filled. Another popular finishing technique is to roll in powdered sugar or a cinnamon/sugar mixture.
- Making a donut from a dough ball (yeast donut). In this process, a rounding and dividing method is used to make a round dough ball. The round dough ball will be formed (rolled out) into a flat round dough slice. Then it will have the time for resting and proofing. After this, a cone will make a hole in the centre part of the dough circle which results in the characteristic donut shape and now the donuts are ready for frying. After frying and cooling, the donuts can be glazed, decorated and filled.
- Making a donut by extrusion (yeast donut). In this method, the dough is loaded into the hopper of an extruder that forms the individual donuts using a pressure-cutter. A batch of donut dough is placed in the top of the open machine. Then a lid is placed on the machine and the machine is pressurised, whereby the dough is pressed into tubes. A pre-scaled amount of dough is extruded into the desired mould rings for conventional donuts or donut circles. After this, the 'rings' rest and proof and then the donuts are ready to be fried. After frying and cooling, the donuts can be glazed, decorated and filled.



Photo: Rademaker

RADEMAKER'S METHOD: SHEETING TECHNOLOGY (YEAST DONUT)

Rademaker has developed a donut line which is clearly different from the above-mentioned methods. This donut line consists out of a low-stress sheeting section and a make-up section. The Rademaker sheeting system receives dough chunks from the incline conveyor. Then the sheeteer shapes these chunks carefully in a continuous low stress dough sheet. The thickness of this sheet is reduced by Rademaker reduction systems, consisting out of the quick reductor and gauging unit.

After the dough sheet has reached its desired thickness, it is guided to the make-up section. The cutting roller or a guillotine then cuts the sheet in separate donuts. The characteristic hole can be made in two ways: by using a hole picking unit which removes the centre part of the donut or a blowing system which blows the centre part away from the donut. The remaining dough will find its way to the side part of the line, where it is collected in collection bins. This dough can be used in the next batch, or even be recycled automatically. This makes it a very efficient production system. Depending on the production process, the donuts are moved to a proofer tray loading system or taken from the conveyor belt and put into proofer trays by hand.

The donuts are now ready for proofing. This will give them the desired taste and volume. After proofing, the donuts are loaded automatically into a fryer. After frying and cooling, the donuts can be filled with jam, chocolate or crème. This is done using a Rademaker depositor. As a last step, the donuts can be glazed and covered with various types of topping and decorations.

ADVANTAGES OF THE SHEETING PROCESS

Characteristic for the sheeting method is that it's an efficient high-speed process which results in a consistent product in terms of quality, shape and weight. In addition, the process is suited for any dough type, pre-proofed or not. By using a Rademaker's low-stress pre-sheeter the dough characteristics will remain beautifully intact, which results in a softer donut with more volume and a fluffy bite. The low-stress technology will moreover result in a longer shelf life: the donut will remain fresh and tender for up to two days.

Another strong advantage is that the donut will absorb less fat when frying, because of the well-developed gluten network in the dough. This is due to the dough structure having been less damaged when compared to other methods.

CONCLUSION

Rademaker's Donut line is ideally suited for bakeries that need a high-quality an efficient production machine made of food graded materials. Moreover, thanks to the hygienic design, the donut line fulfils the strictest requirements of hygiene and the ability to efficiently clean the machine. The donut line is also easy to maintain and operate. Flexibility is offered, as all types of donuts can be produced with this line. By adding additional tooling, it is also possible to produce various other types of dough products, like Long Johns, Cinnamon Rolls, Honeybuns, Bismarks, and many other shapes. If so desired, Rademaker can take care of the complete production process by delivering a complete system integrated production solution. Together with the customer, the Rademaker system integration department will develop a solution that suits the customer best, from mixing through packaging. •



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BETTER FOR DOUGH



Choosing Conveyor Belts for Food Safety

Running a food processing plant is not an easy task, not least because of the complexities of dealing with food safety and hygiene. This makes choosing the right conveyor belt to use in food processing applications a crucial task.

By Tudor Vintiloiu

While food plant managers do a good job of keeping their facilities clean, food debris and microbes can still find their way into the smallest of dead spots. Bacteria can harbor on and in conveyor frames, under equipment, under the belt, or even in the small gaps of a plastic modular belt. What's more, they can elude even the most rigorous cleaning cycles, leading to excessive use of detergent, water, time and energy.

Anna Marcol, marketing communications manager at conveyor and power transmission belt specialist Habasit, shared insights from a recent webinar delivered jointly by experts from Habasit and NGL, who discussed how hygiene-rated equipment and the right choice of belt type and material, are crucial in achieving food safety.

"When thinking about food safety and hygiene, food processing professionals should consider two key areas: hygiene-rated equipment and the right choice of food-contact elements, including belt type and material," Marcol explains.

HYGIENIC APPROACH

In open conveyor systems, food debris can contaminate surfaces and get into crevices and internal support structures over time. While effective cleaning and sanitation plans reduce contamination, equipment and components designed specifically for hygiene can take less time, water and cleaning agents to clean and sanitize.

Therefore, equipment and components should be appropriately hygiene certified for food. This includes meeting minimum hygiene standards in accordance with industry guidelines such as

3-A, NSF or EHEDG, as well as being compliant with the food contact regulations by the FDA or EU 1935/2004, and other national regulations. Hygiene certified components consider, among other factors, the cleanability of surfaces, preventing ingress and the growth of microbes in dead spaces, self-draining surfaces or on levelling-feet or castors and much more. However, these measures are only a means to an end.

Habasit's Hygiene Program Manager, Bernd Roser recently delivered a webinar on food safety jointly with Niels Vindsmark, Sales and Brand Owner Program Manager at hygienic component manufacturer NGL.

In the webinar, Niels explained: "Applying hygienic certified components will not avoid an outbreak, but the more problems you can eliminate and the more certified hygienic components you have in your production facility, the less places you have to look at and worry about if you have an outbreak."

BELTING


Bernd Roser pointed out that food plant managers should consider three areas when using open conveyor systems: choosing the right conveyor design, choosing the right food contact material to match the process conditions and selecting belts that support ease of cleaning.

A conveyor design supporting sanitary needs

ThermoDrive's light weight and open access design make cleaning in place achievable, leading to a dramatic decrease in sanitation time and costs.

Rudy de Mul,
Intralox Global
Team Leader
Bakery and Snack

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is one that provides easy access to belting from all sides, to allow operators to inspect, clean, sanitize and validate effectively. When selecting the right food contact material, it's important food processors choose a belt that doesn't change its mechanical properties or wear quickly when regularly exposed to harsh, chemical-based cleaning cycles, at elevated temperatures and with extended contact times. To support engineers in identifying the chemical resistance of various belt types and materials, Habasit has created a free online tool to help users decide the best belt for them. For applications exposed to very demanding hygiene conditions, Habasit has also developed Super HyCLEAN, a plastic modular belt that minimizes the use of rods and hinges to aid cleaning, ideal for applications such as fish and poultry. Intralox is another company that offers a full range of hygienic modular plastic belting designs with state-of-the-art durability and sanitation features. This is supported with a variety of easy to clean components such as EZ clean sprockets. Rudy de Mul, Intralox Global Team Leader Bakery and Snack says that on the plastic modular side of their business the typical materials used are Polypropylene (PP), Polyethylene (PE) and Acetal (AC). "Intralox's hygienic modular plastic is the definitive solution when the strongest durability is required for hygienic sensitive applications. Hygienic modular plastic offers maximum sanitation, as well as corrosion and abrasion resistance, positive drives, low friction and high strength, and customization opportunities. With it, our customers see improved hygienic performance and dramatic reductions in costs and product loss," he points out. Their SeamFree belting features cam-link hinges that prevent debris from clogging the belt. Channel water and debris to the belt edge for easy cleaning due to the patented flume design. SeamFree belts are manufactured in non-absorbent, non-porous belt material, decreasing the risk of contamination and can be assembled without bricklaid seams up to a width of 914 mm (36 in).

Examples of features that will play a role are reliable standard materials (PP, PE, AC) with the following characteristics:

- High-Impact
- Metal and X-ray detectable
- Various colors to facilitate visual detection
- Color contrasts for cleaning purposes

"Our ThermoDrive belting solutions combine our patented tensionless belt system with the hygienic benefits of homogeneous, solid thermoplastic structure. Customers receive a new standard in operational efficiency as the ThermoDrive tensionless belt system provides reliable, predictable drive performance while reducing costs with unparalleled belt life, minimal component wear, and improved yield. The technology combines flat, homogeneous thermoplastic material, and the positive drive feature of modular plastic belting with a unique, patented drive engagement solution. This patented combination creates a one-of-a-kind tensionless belt system that eliminates the costs and complexities associated with managing a tensioned belt system like traditional flat belting," said Rudy de Mul. ThermoDrive's light weight and open access design make cleaning in place achievable, leading to a dramatic decrease in sanitation time and costs. Coupled with Intralox's 24/7 customer support and unparalleled guarantees, ThermoDrive can help food manufacturers achieve reliable, predictable operational performance for their hygienic conveyance.

Whatever the food processing application, choosing the right conveyor belt, and ensuring equipment is designed with hygiene in mind is pivotal. Not only will it help food processors comply with industry standards, but it will also ensure the industry can continue to reduce the dangers of contamination – and make it easier for plant managers to run their facility. •

Niels Vindsmark, Sales and Brand Owner Program Manager at hygienic component manufacturer NGI



Applying hygienic certified components will not avoid an outbreak, but the more problems you can eliminate and the more certified hygienic components you have in your production facility, the less places you have to look at and worry about.

Inspection and Monitoring: An Investment for the Future

With increasing globalization, the competitive pressure is rising throughout the industry. Producers are facing growing cost pressure on the one hand and increasing quality requirements on the other. Efficiency is the key word, and the right investment in the right equipment can be a business-saving move.

By Tudor Vintiloiu

When investing in new equipment, it is often only the equipment price and, if applicable, the design-in that are decisive for the purchase, while costs for maintenance, repair or wearing parts are given little consideration. The list of indirect costs is long: the lack of compatibility with other manufacturer's products or the non-use of technical features can also make a purchase more expensive in the long run.

CHECKWEIGHERS

With its "Invest to Save" initiative, Minebea Intec, a manufacturer of industrial weighing and inspection technologies, aims to demonstrate how precise technology, professional advice, efficient service and staff training can lead to significant cost savings. Initial additional costs pay off quickly over the years and thus offer an earlier return on investment. Minebea Intec experts are available to advise interested parties, for example, on the analysis of their total cost of ownership, which visualizes all cost factors.

"A good example of smart product features is Trend Control, which is available for numerous dynamic checkweighers from Minebea Intec. It benefits customers from all industries that use filling, portioning or cutting machines. While overfilling is characterized by unnecessary material loss, the opposite is equally negative for production: underfilling during production can result in expensive recalls and thus cause lasting damage to the brand. To avoid this, many producers often accept unnecessary overfilling, which

causes additional costs. Trend Control of the Minebea Intec checkweighers counteracts this by controlling upstream filling and portioning processes. As a result, the dynamic checkweighers prove to be an investment in greater efficiency and less raw material consumption," Minebea's experts point out.

X-RAY INSPECTION

Ishida Europe Ltd has introduced a holistic complete product offering across its entire X-ray portfolio that provides customers with peace of mind and delivers a guaranteed Total Cost of Ownership (TCO) of less than 3% per annum over a 5-year period. The adoption of X-ray technology has greatly increased over the last decade as food



Minebea Intec

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Minebea Intec, supports customers on their way to increased efficiency and shows which long-term decisions lead to a faster return on investment.

retailers place greater quality demands on their supply base. X-ray platforms can offer significant benefits over alternative foreign body detection technologies such as metal detectors, thanks to their ability to detect a wide range of foreign body contaminants beyond metal, including glass, stones, ceramics and rubber. They can also provide additional functionality, including checking for missing items, damaged products or the correct fill level.

“An investment in X-ray technology by a food producer is a clear sign that they have a focus on ensuring the quality of their products to their end customers,” says Sibtain Naqvi, Ishida Europe’s X-ray product manager. “However, a concern that food companies have raised with us around X-ray technology is the additional training and the costs surrounding the replacement of some of the components.”

While the majority of the spare parts required for X-ray equipment are relatively low cost and in line with the maintenance requirements around checkweighers, the systems’ X-ray generators and line sensors can be quite costly items to replace. Ishida has therefore introduced unique low-cost service packages for new X-ray machines that incorporate complete coverage for the units over a 5-year period.

“Although these components in our X-ray inspection systems already come with standard warranties which are on average around two years, and their rugged and reliable construction means they can typically last well beyond this warranty period, we have listened to our customers and devised a package that is unlike anything else currently available on the market and which will deliver additional benefits to users,” explains Sibtain Naqvi. The Ishida package is based on a fixed fee with no hidden charges, and this guarantees full coverage for the X-ray inspection system over the initial five years of the machine install. Within each package, there are a wide range of additional features including two service visits per annum, calibration and validation, technical support, and all service and spare parts costs.

“Our range of packages means we can tailor a solution to individual requirements,” concludes Sibtain Naqvi. “What they all offer is cost-effectiveness and complete peace of mind for customers in ensuring they can maintain the highest quality standards for their products.”

An investment in X-ray technology by a food producer is a clear sign that they have a focus on ensuring the quality of their products to their end customers.

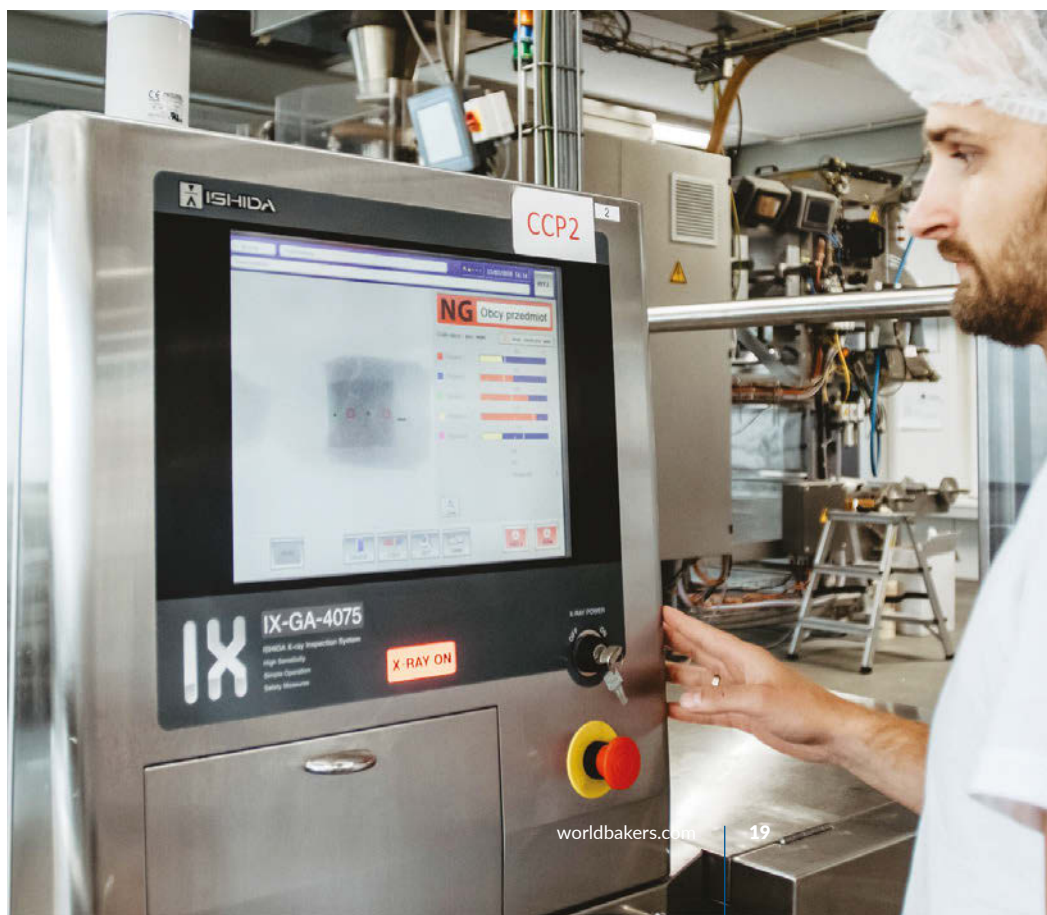
REMOTE SERVICE

For a production manager, nothing is as expensive as equipment downtime. Minebea Intec contributes to optimizing efficiency here as well. The manufacturer’s intuitive augmented reality service tool miRemote helps reduce avoidable production downtime and offers direct service whenever and wherever customers need it. The immediate on-site service works with the help of an app that is launched either via smartphone, tablet or as a web app. Using a live video connection, the Minebea Intec service technician sees what the customer sees via the unit’s camera and can give direct instructions or overlay supporting information. The possible applications of miRemote are manifold. From operator correction to error analysis to quick identification of the right spare part, all functions are designed to support the user in his work and efficiently reduce any downtime.

While all these tools may carry initial additional costs, experts agree that in all cases the financial effort pays off quickly over the years and thus offers an earlier return on investment. •

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*Sibtain Naqvi,
Ishida Europe’s
X-ray product
manager*



Oils, Fats and the Health Trend

In bakery applications, fats and oils play important roles in structure development, tenderness, aeration, leavening, flakiness, emulsification and flavor enhancement. The choice for one or the other solution depends on formulation, desired viscosity and shopper preferences.

By Tudor Vintiloiu

Food brands attuned to their consumers' needs are avidly striving to align their products with sustainability values, including an increasing demand for organic products. Last year Mintel reported that globally, one out of eight food introductions were organic and in Europe this ratio was even higher at one out of five.

"Food companies increasingly view 'organic' as an expression of transparency and being closer to nature — messages that strongly resonate among the growing community of conscious consumers," says Marcel Henneman, director of Product Management EMEA for Bunge Lodars Croklaan. "To achieve an 'organic' label status, food manufacturers are required not only to ensure the ingredients in their products are sourced organically, but also that the manufacturing processes employed are certified organic."

Bunge Lodars Croklaan, announced earlier this year that it was, growing its organic portfolio in Europe, offering a steady and scalable supply of organic oils and fats, ranging from sunflower, rapeseed and soy to palm, shea and coconut. The company is also broadening its select network of organic farmers. According to the company, this new offering lifts a common barrier — the difficulty in finding a reliable organic supplier — hindering food companies from moving toward organic status.

"We invite brands to tap into our long-standing knowledge and experience in

lipid processing," says Feike Swennenhuis, marketing director Europe for Bunge Lodars Croklaan. "Whether formulating from scratch or reformulating traditional products, we can tailor any kind of fat solution to meet our customer's specific organic aspirations and our approach is centered around our 'let's create together' principle. We deliver organic quality for both primary lipid sources and more specialty lipids, such as lecithins and fat formulations for infant nutrition, confectionery, bakery, culinary and plant-based. We will continue to extend the options of customized organic solutions to a comprehensive range of food applications," he added.

CHANGING CONSUMER PRIORITIES


Cargill also believes it is important to have a deep understanding of consumers in order to give their customers the right solution at the right time. "Through TrendTracker, our proprietary perspective on food and beverage trends, we keep our fingers on the pulse of consumers, ensuring that we stay in touch with changing consumer priorities," says Susen Gottwald, Cargill's

Susen Gottwald,
Cargill's Customer
Innovation Manager
Bakery

“

[Consumers] seek balance and are empowered to make their own determination of what is and is not healthy for them.





We invite brands to tap into our long-standing knowledge and experience in lipid processing.



Feike Swennenhuis,
marketing director
Europe for Bunge
Loders Croklaan

Customer Innovation Manager Bakery. "We've identified 'Healthy for Me' as a key influence in the fat and oil space, as consumers embrace a more proactive, personal and holistic approach to health. They seek balance and are empowered to make their own determination of what is and is not healthy for them." Consumer interest in 'cleaner eating' is part of this larger health-focused movement. Many consumers seek to avoid processed bakery and confectionery products, referring to the ingredients to help them determine how processed a product is. Here, recognizable ingredients are key. More than half (55%) of European consumers say recognizable ingredients are important in brand selection. One in four (42%) look for clean label ingredients and a similar percentage say "has fewer ingredients" is important in brand selection. "Cargill's CremoFLEX line of plant-based, filling fats are a great example of how Cargill uses consumer insights to inform our product development efforts. One aspect that all products in the range have in common is the focus on responsible and sustainable formulations. When it comes to the CremoFLEX options in the range that contain palm oil, all are made through the sole use of sustainably sourced palm oil. The entire portfolio consists of label-friendly and healthy solutions, made with non-hydrogenated fats," Gottwald explained. Cargill says they leverage key consumer trends in order to build upon their customers' innovation capabilities. Cargill's Global Edible Oil Solutions team includes industry-leading experts in R&D and application, ready to collaborate with customers to address formulation challenges. Their application center in Vilvoorde, Belgium, includes a state-of-the-art bakery hub, where they invite customers from across the EMEA region to work together

to solve their food formulation challenges and co-create new ingredients and recipes alongside Cargill's food experts.

BEST OF BOTH WORLDS

Michel Burla, CEO Grüninger AG explains there are several parameters that influence the decision as to which bakery fat to choose – technical or product-specific aspects, but also strategic ones. Plant-based products are in high demand, with the use of comprehensive technology making it possible to add, for example, milky or nutty natural flavors to vegan margarines for the best of both worlds - vegetal ingredients and a butter-like taste. "As one of the few margarine manufacturers in Europe, we rely on cooling drum technology to optimize the texture of plant-based products without using additives or solid components such as palm fat. Here, crystallization takes place in a sudden and abrupt manner, creating a network of finest fat crystals. This means fats with high plasticity can be created, and these are ideal for applications such as puff pastry or croissants," says Burla. "For crystallization processes, a solid part of a fat blend is necessary in order to meet technical requirements. The ratio of solid parts within the final structure of a fat depends on the individual use. Here, our expertise is crucial when working with customers on tailor-made fats and margarines." In terms of sustainability, animal products such as beef or pork fat are often underestimated, Grüninger AG's expert believes. Co-products from the meat industry are not wasted, and thus contribute to the nose-to-tail utilization of livestock – with savory applications such as quiches and pies benefiting from the spicy, substantial flavors. "The type of processing also influences the choice of fat: soft fats such as margarine and butter are only stable up to approximately 150°C, and are therefore only suitable as spreads, for steaming or short baking. When higher temperatures are required, e.g. for deep-frying, solid fats are a better choice. Coconut oil, tallow and lard only decompose at about 200°C, while some vegetable oils can also be used for processes up to 190°C," Burla concludes. •

Michel Burla,
CEO Grüninger AG



Plant-based products are in high demand, with the use of comprehensive technology making it possible to add, for example, milky or nutty natural flavors to vegan margarines for the best of both worlds.

Food Allergen Management: What to Know About the Codex Code of Practice



Roughly 3% to 10% of adults and 8% of children worldwide are estimated to have a food allergy. Cases of food-induced anaphylaxis, at times resulting in fatalities, highlight the importance of allergen management in the food and drink industry – making this not only a current hot topic, but also one that the sector will continue to deal with long term.

By Chris James, Food Safety Specialist – Allergens, and Helen Arrowsmith, Principle Food Law Adviser and Allergen Specialist, Campden BRI

Codex recently shone light in this area following publication of its code of practice (COP). As this significant guideline generates traction, our food safety and regulatory allergen specialists at Campden BRI breakdown the key parts to help you understanding the COP that can assist with your allergen management.

CODEX ON FOOD ALLERGEN MANAGEMENT FOR FOOD BUSINESS OPERATORS

The Codex Alimentarius Commission (Codex), a collaboration between the Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), is the global organization that provides international food standards, guidance, and



codes of practice. This is to help ensure that food is safe and can be traded around the globe. Along with the most recent revision to the Codex General Principles of Food Hygiene (amended in 2020), they published their first ever Code of Practice on Food Allergen Management for Food Business Operators.

This much anticipated code of practice addresses the increasing global food safety issue of food allergens. It also supports all food business operators (FBOs), across the food chain, with a proactive harmonized approach to mitigate the current major public health burden and significant reduction in quality of life of consumers who have food allergies (immune-mediated food hypersensitivities).

COP's Relevance for Different Regions of the World, Including Asia

Codex Alimentarius Codes of Practice and Standards represent an international consensus on a specific issue relating to food quality and/or safety, and in many jurisdictions contribute to the development of relevant laws. It is important to note that - although Codex Alimentarius documents have no legal basis - because they represent an international scientific consensus, they can also be used to inform arbitration decisions in some international trade disputes. Additionally, aspects of many third-party food industry standards also find their bases in Codex Alimentarius documents.

Some Asian countries already have legislation in the area of food allergens but may look to this COP to amend their legislation. In countries where legislation does not already exist in this area, it might be used in the development of additional regulations. Similarly, food businesses may consider reviewing their food allergen management systems in light of it. In summary, the COP represents a consensus position on international best practice for the management of food allergens and might be used in the development of relevant legislation or improved food industry standards.

FOOD ALLERGENS

Allergic reactions to food are the result of an adverse immune response to proteins within foods. The Codex COP tells us that consumption of food allergens should be identified as a significant food safety hazard for allergic individuals. While many different foods can cause allergic

reactions, globally there are eight food product groups (including products derived from these), which cause the majority of allergic reactions, these are:

- cereals containing gluten
- peanuts
- tree nuts
- milk
- eggs
- fish
- crustaceans
- and soybeans

Providing accurate information to food-allergic consumers is critical to ensuring their safety. Different jurisdictions have different rules concerning the obligatory and accurate provision of information concerning foods, which are considered to be significant food allergens for their population. Other food allergens such as sesame, mustard, mollusks, celery, and lupin are recognized as important in many countries, including the UK and Europe (for full list in these jurisdictions: Food Information to Consumers Regulation (EU) No.1169/2011 Annex II).

Processing methods such as thermal or high-pressure processing, which are often used to control pathogenic microorganisms, generally do not destroy allergenic proteins. Thus, the management of food allergens is crucial to prevent the presence or introduction of undeclared and/or unintended allergens in food products, which results in the hazard of inadvertent consumption of a food allergen by a sensitive individual.

PUSHING PROACTIVITY IN ALLERGEN MANAGEMENT

The guidance provided by Codex to FBOs is to adopt a proactive and preventative approach to managing allergens in the food chain, rather than a reactive response once an allergen issue (such as inadvertent cross-contact of a food with an allergenic food) has occurred. This can be achieved through good hygiene practices (GHPs) or pre-requisite programs and, where appropriate, the implementation of HACCP systems. The Codex COP states that allergen management systems and their control measures should be based on risk assessment conducted by the FBO, in which they must identify the allergenic nature of the foods they handle and establish controls. This is to eliminate or minimize the potential for introduction of unintended allergens through cross-

**3%
-10%**
of adults and
8%
of children
worldwide are
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allergy

contact, or for undeclared allergens to be present due to errors in the supply chain. The provision of accurate allergen information for consumers of foods sold loose (for example in food service) and on labeling of prepacked foods is also emphasized as an objective of the allergen management plan.

Guidance and examples of good practice allergen management are provided in areas such as:

- primary production
- design and facilities
- maintenance and sanitation
- personal hygiene
- transportation
- product information
- training

The largest section of the COP relates to control of operation, which covers aspects such as control of food hazards, incoming material requirements, management and supervision, documentation and records, and recall procedures. Advice relevant to manufacturing and retail and food service is provided separately in each section.

Whilst the Codex COP is guidance, it does provide global regulators and legislators with the principles upon which to lay down new legislation or amend existing laws. This has already been observed with the publication of Commission Regulation (EU) 2021/382. This legislation is an amendment to the general hygiene Regulation (EC) 853/2004 in the EU to introduce requirements for FBOs to manage food allergens. In addition, in the US the Food Allergy Safety, Treatment, Education, and Research Act of 2021 (FASTER Act) has been passed to add sesame to the list of major allergens.

Once developed, existing food allergen management practices should be periodically reviewed. The Codex COP



provides guidance on a proactive approach for effectively managing allergens in all food businesses from farm to fork and can therefore be used to help improve existing plans and develop them where they are currently limited or even absent. Better pre-emptive management of allergens and accurate allergen labeling will not only help to prevent potential financial implications (for example, from product recall or withdrawal) and brand damage for food businesses', but will also benefit allergic consumers (by reducing their risk and uncertainty) ultimately improving their quality of life. Issues touched upon within this article are just some of the areas that our regulatory experts at Campden BRI help with. •



Some Asian countries already have legislation in the area of food allergens but may look to this COP to amend their legislation. In countries where legislation does not already exist in this area, it might be used in the development of additional regulations.

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Advances in Environmentally Friendly **Polymers for Food Packaging**

Although plastics have received significant backlash and criticism in recent years due to their environmental impact, they play a vital role in food packaging. In fact, their versatility, strength and durability make finding a like-for-like alternative incredibly challenging.

By Ben Smye, head of growth at materials search engine Matmatch

To develop sustainable food and beverage packaging without compromising performance, food manufacturers should turn to biodegradable and bio-based polymers. But how viable are these greener plastics?

The food industry is one of the sectors that benefited the most from the developments in plastics in the past century. Just as refrigeration revolutionized preservation of food for consumers, plastic packaging reshaped product possibilities and food distribution. Plastics provided an effective, mass-producible means of extending the shelf life of products by protecting them from oxidation, microbial growth and some damage during transportation.

To this day, thermoplastics are widely used for the majority of food and beverage packaging. This is due to their flexibility, impact resistance, lower molecular weight and, crucially, their ability to be recycled. However, being recyclable is not enough on its own. Since it has become apparent that plastic is often not being disposed of properly or the infrastructure is not in place to support recycling of all plastics, the

need has arisen for other environmentally friendly alternatives.

Several materials such as paper, glass and aluminum have grown in popularity for food packaging in recent years. But as any design engineer knows, simply substituting one material for another is not straightforward — the properties of the original material and its replacement need to be taken into consideration. This has led many food-packaging companies to instead consider biodegradable and compostable polymers, which can exhibit comparable properties to conventional plastics.

The degradation process that a polymer goes through helps to define whether it is biodegradable or compostable. In the case of the former, the polymer decomposes into carbon dioxide, water, inorganic compounds and biomasses in certain controlled environments, such as under high temperatures or when exposed to certain chemicals.

Compostable polymers, on the other hand, are defined much more closely. European standard EN13432 requires that any plastic that's marked as 'compostable' needs to break down under industrial conditions -



in temperatures of up to 60 degrees Celsius - in under twelve weeks. Within these definitions, there are many biodegradable polymers that are proving themselves to be valuable in food packaging. Natural polymers such as cellulose can be used as films and fresh produce packaging; non-natural polymers like polyglycolide (PGA) can function as the protective layer in multi-layer packaging; and synthetic polymers, notably Polyhydroxyalkanoates (PHA), can be used in bottles and containers. Where biodegradable and bio-based polymers have historically faced limitations, however, is in scalability and compatibility with existing processing methods. But the increased drive in green polymer innovation in recent years is helping to overcome these hurdles. Polylactic acid (PLA), for example, is receiving a lot of interest in food and beverage packaging. This interest has arisen due to its thermal and mechanical properties, as well as its compatibility with processing methods such as injection molding, film extrusion and thermoforming. These properties have led to it being researched and used in areas like food trays, disposable straws and lids. A vast body of research is developing around biopolymers and biodegradable alternatives to conventional plastics. The key, as always, is for product designers to keep abreast of the latest developments and ensure that the alternative materials can deliver the performance properties that the market expects from plastic packaging. Matmatch works closely with many materials suppliers globally, several of which have ongoing development in the field of more environmentally friendly packaging substances. One such company is Total Corbion PLA, a leading producer of PLA, a biobased and biodegradable polymer that can be used in packaging applications. Made from renewable sources, PLA offers a reduced carbon footprint when compared with traditional plastics. A number of PLA materials have been food contact-approved, and as development continues on their Luminy portfolio, Total Corbion PLA is providing

Where biodegradable and bio-based polymers have historically faced limitations, however, is in scalability and compatibility with existing processing methods.

innovative and biobased solutions to packaging problems. Another company is Stora Enso, which focuses on bio-based materials. 'Bio-based' means the materials are produced from renewable feedstock rather than oil-based sources. Stora Enso is a leading global provider of renewable solutions for packaging. The company's goal is to move away from fossil-based materials and, as such, their products offer a lower carbon footprint than traditional plastics and often have superior recycling properties. The challenge of creating a sustainable material that can serve as a one-to-one alternative for conventional plastics has yet to be solved. Biodegradable materials could fit the criteria to a certain degree, depending on the sustainability of their raw materials. However, there's no shortage of companies developing innovative products to provide an alternative to traditional plastics. With so much research and development in the pipeline, the future of environmentally friendly food packaging looks to be full of ground-breaking ideas. And with companies like Matmatch connecting design engineers with the materials suppliers that can fulfill their requirements, it seems that there's a revolution in food packaging just on the horizon. •

The key is for product designers to keep abreast of the latest developments and ensure that the alternative materials can deliver the performance properties that the market expects from plastic packaging.

Crackers, Pretzels & Extruded Snacks



Soft biscuits, decadently light and soft, or buttery and flaky, are bound to be a welcomed mainstay among consumers' favorites. If the world's reliable love for biscuits is anything to go by, lockdown is bound to have increased biscuit sales; and it has.

By Sharmila Rajah

Old habits die hard. Snacking, a timeworn activity among consumers, has taken up a much larger role in recent times, extensively bolstered by the pandemic. Fragmented eating has replaced traditional meals through lockdowns globally. In a post-COVID 19 world, healthy snacking enjoys prominence, strongly driven by consumers' need for convenience, comfort and nutrition. The pandemic has transformed the industry and affected long-term trends that are heightening the focus on wellness and health. Grocery aisles are stocked with healthier savory snacks in localized flavors that are fast outpacing traditional deep-fried and extruded snacks. Taste, pleasure and nutrition are powering snack development with savory inclusions such as chia seeds, quinoa and crisped rice. Sustainability is all the rage. Last year's Sustainable Market Share Index reported that products carrying a sustainability claim had gained momentum, capturing 16% of the market across all CPG categories, up from 14% in 2015. Healthy snacking is likely to drive the demand for pretzels, a healthier alternative. According to Global Data, the Asia Pacific savory snack market, led by China and India, accounts for 39.3% of the global market in terms of value and is expected to grow at 7.1% CAGR by 2023 to USD73.9bn. The region's growth is fuelled by rising income levels and health awareness trends.

Crackers, pretzels and extruded snacks find their way into homes in the Asia Pacific market with the aim to delight. Savor M&S

Made Without Wheat and Gluten Free Cheese Crackers; baked to perfection Gratify Pretzel Sea Salt Twists Gluten Free; plant-base Ape Snack Puffs that are full of flavor yet suitable for those with special dietary requirements; the Meiji range of crackers that employ a traditional long fermentation process; and Ritz crackers, ranked highly in Taiwan, Thailand, Australia and Indonesia. The global crackers market is growing steadily with key players such as Nestle, Kellogg's, Mondelez International and PepsiCo. Likewise, the global pretzel market is expected to grow at a CAGR of around 4% between 2021-2026. Pretzels are increasingly preferred by younger consumers drawn by the market's new products in different shapes and sizes such as pretzel sticks, sandwiches, poppers and minis. Manufacturer's have begun developing all-natural cholesterol-free and gluten-free pretzels, fortified with essential vitamins and minerals.

CHINA

The Chinese love their snacks. The country's retail snack food market, dominated by domestic and East Asian brands, is forecast to reach USD89.9bn by 2023, up from USD72.6bn in 2019. This 5.5% CAGR exceeds the global retail snack market's forecast CAGR of 3.9%, giving China a 44.1% share of the global market. China's top selling snack categories include crackers.

Crackers – delicious and healthy – are hugely popular throughout China, available in multiple shapes, sizes and flavors. The Chinese fill their carts with snacks that have



engaging textures - crunchy and crispy with each bite. Mintel's research states most Chinese consumers (59%) think a crispy texture is ideal for crackers. On local supermarket shelves, consumers can find such varieties like: Jiashili Crackers, Pacific Soda Low in Sugar Crackers, rice crackers from Panpan Food and Senbei (traditional rice crackers) from Want Want Holdings. FMCG Gurus support the nation's obsession with healthy snacks, reporting that 91% of Chinese consumers are making greater efforts to eat and drink more healthily. The makers of UK-based healthy snack brand Eat Real will launch in the country's highly competitive snacking market this year. On the list of exports are quinoa and hummus-based range of snacks. Eat Real is giving Chinese consumers what they desire - lower calories, lower fat and higher protein products that don't compromise on

flavor and texture. Incidentally, Eat Real has also seen their sales increase in Singapore, Malaysia and New Zealand.

INDIA

India's snacks market value in 2020 was about USD5.57bn and is expected to reach almost USD13bn by 2026. With rising urbanization, changing consumption patterns and a huge domestic market to cater to, opportunities for various products and their respective markets have been on the rise. Just like the rest of world, snacks in the country have taken a healthy twist especially with the Eat Right Movement advocated by The Food Safety and Standards Authority of India (FSSAI). There's been an increasing shift towards healthy snacking alternatives.

Crackers are emerging as popular snack options that are high on nutrient content.



Crackers are generally low in calories as compared to other biscuits as they are made with wheat flour or oats and are a rich source of Vitamin B-Complex and dietary fiber. Bonn Group, one of India's leading manufacturers of food products, has launched Americana Multigrain Cracker Biscuits, a healthy treat with a perfect blend of flavors. MAYORA India's Malkist is a much-differentiated cracker, with each biscuit made out of seven layers that incorporate such innovative toppings like cheese, cappuccino and chocolate.

Meanwhile Britannia Industries, which comes with a 100-year-old legacy, unveiled

their all-new NutriChoice Sugarfree Crackers that are thinner, lighter and crispier. Foreign brand Orion, one

of South Korea's largest food companies, has launched

O'Rice crackers - a 100% vegetarian snack that is baked to maintain nutritional goodness – capitalizing on Indian consumers' love for rice.

India's extruded snack segment – that includes ready-to-eat snacks, breads, bread sticks, soy sticks, flat breads, cookies, namkeen, breakfast cereals and baby food - is the largest segment in the snack processing industry. The market, valued for its shelf stability, is expected to grow at a CAGR of over 20% by 2024. Major players

operating in the market include

PepsiCo, ITC, Prataap Snacks, DFM Foods and Haldirams.

A popular brand amongst kids is Bikano with its range of Ringz, Puffees, Cheese Balls, Pasta Crunch and Jungle Safari.

Since extruded snacking options require no preparation or cooking, the products are convenient to eat at home or to take to school. Another healthy option is the multi-millet ready-to-eat extruded snacks and these include millet flakes, extruded millet-cereal-pulse snacks, murukus, bhujia, biscuits, cookies and tortilla chips.

JAPAN

Rice crackers are synonymous with Japan. These days you can find an assortment of crackers: seaweed rice crackers, bin bin rice crackers, wheel crackers and spring onion crackers. Key Japanese brands include Sanko Seika, Mochikichi, Oishi,

Echigoseika and KAMEDA SEIKA, which has expanded into markets in the US, China, Thailand, Vietnam, Cambodia and India, where its rice crackers are a firm favorite. Japanese snack expert Calbee has shifted focus to create chocolate-covered shrimp snacks that are low in salt. The company has pledged to reduce sodium content for their entire portfolio by 20% until 2030. Another snack maker Keishindo is doing their bit to reduce food waste by transforming discarded foods such as shrimp heads and udon noodle scraps into sustainable shrimp crackers. Established in 1866, the Nagoya-based company is renowned for its shrimp crackers typically made from shrimp surimi (paste), wheat and soy, as well as whole grilled shrimps.

AUSTRALIA

The market here has seen a sharp rise in healthy snacking, brought on by the work-from-home culture. Consumers are increasingly considering premium snacks with flavors and ingredients anchored in health and wellness. Mondelez Australia is cashing in on the increasing demand for healthier savory snacks with its recent entry into the local premium cracker category. The company has bought over Gourmet Food – well-known for their healthier cracker brands such as Olina's Bakehouse and OB Finest.

ELSEWHERE

In South East Asia, heavy-weight brand Julie's wheat crackers enjoy a strong following in Singapore with its newly rebranded range of cheese and butter, wheat, veggie and milk-flavored crackers. Jacob's, a brand under snack giant Mondelēz International, is a long-time favorite in this region.

THE MIDDLE EAST

Snacking is catching on in a big way in the Middle East. Egyptian snack manufacturer Future Foods embraced the pretzel trend by launching a new, innovative pretzel range using tna intelli-flav OMS 5, a responsive variable mass seasoning mechanism with dynamic vibratory weigher, for better tasting pretzels. The extruded snack food market in the Middle East reached approximately USD2.1m in 2018 and is expected to expand at a CAGR of 4.2% to 2024. The strong growth is due to a shift towards Western food cultures and an increasing population with rising disposable income. •





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South East Asia Takes a Chance on Premium

The Southeast Asia bakery products market was valued at USD13,4bn in 2020 and is projected to grow at a CAGR of 7.6% during the forecast period (2021 - 2026), according to market research data from Mordor Intelligence.

By Tudor Vintiloiu

The COVID-19 pandemic resulted in the generation of opportunities for many bakery industry private players to emerge in the markets to cater to the inflated demand. According to Mordor's report, the demand for innovative biscuit products is consistently high in the developed countries because bakery products are a quick and convenient source of nutrition and energy. Governments worldwide have proactively responded to the situation to control the spread of the disease, and efforts have been made to provide staple food to all sections of society in these disturbing times. This factor has sustained the demand for snack food, including bakery products, in the global market during the COVID-19 pandemic.

CONSUMER DEMAND

SEA consumers are looking for value addition in the bakery products market in terms of health, specific certifications like halal and kosher, freshness, and new products with innovative flavors. In response, the bakery industry in Southeast Asia has increased the availability and variety of healthy baked goods, such as high-fiber breads, gluten-free ranges, and low-fat flat breads. Many breads, cakes, and pastry products have also been launched with added benefits, or highlighting health-related properties, such

as multi-grain or whole-grain, as well as claims, such as low/no/reduced fat and no additives/preservatives. Additionally, Southeast Asian consumers are continuously on the lookout for new flavors, and artisan bakers are rolling out flavorful specialty bread creations, contributing to the premiumization of bread baskets. Some flavors have become quite common, like pandan, black sesame, salted egg yolk, and lychee.

ARTISANAL AND HEALTHY PRODUCTS

There has been a significant increase in the demand for natural/organic food products. Consumers are becoming more aware of the adverse health effects associated with the consumption of various synthetic or artificial food ingredients, which are used in quantities that do not comply with governmental standards in food products. Southeast Asian consumers are increasingly adopting western-style diets containing wheat and high protein content. Thai consumers, in particular, are seeking healthier diets, Mordor Intelligence notes. This has pushed local companies to produce gluten-free baked goods and clean-label bakery products. Similarly, snack products with claims of being natural and organic have witnessed increased demand in Malaysia and Singapore, and this concept has been





evolving across other markets as well. The increased consumer demand for nutritious products and the rising clean-label claims on products accelerate market growth in the region. Product launches with various label claims, such as “no artificial additives”, “no preservatives” “non-GMO”, and “reduced sugar”, are witnessing a notable growth.

INDONESIA ACCOUNTED FOR THE LARGEST MARKET SHARE

By country, Indonesia accounted for the largest share of the market studied in 2020 by Mordor. However, Myanmar is expected to register the fastest growth, with a forecasted CAGR of 10.13% until 2026. This is mostly due to ramped-up product innovation across the region. The bakery products market is experiencing significant growth, as players operating in this region are continuously differentiating their offerings in terms of ingredients, flavors, composition, and packaging types. There is an influence of western flavors and culture on some Southeast Asian countries, particularly in Indonesia. Here, consumers are increasingly seeking convenience foods, which presents opportunities for the industry. With an aim to differentiate their product offerings and broaden their customer base, the leading players are attracting those consumer groups with specific interests. Products with organic/natural and vegan ingredients, and products with special ingredients are becoming prominent.

THE FUTURE IS PLANT-BASED

Many people used the past year to rethink their lifestyle and concluded that they

wanted a more balanced life and diet. For a growing number of consumers who want to eat guilt-free, skipping animal products is the way forward, according to the Taste Tomorrow research by Puratos. The rise of vegan, organic and vegetarian eating is part of a bigger trend, in which the food we choose to eat is used as a way to express our personal values. Consumers increasingly want to behave ethically and responsibly, so they are mindful of animal welfare, fair trade and sustainable choices in packaging and sourcing. Taste Tomorrow research shows that 50% of consumers claim to try and buy sustainable foods products and 45% of consumers believe that plant-based food has a positive environmental impact. Choosing a plant-based diet fulfills consumers' desire to contribute to a better world and reduce environmental footprint. But this trend isn't just about cultivating a healthy conscience: plant-based consumers hope to achieve a healthy body as well. According to Puratos' research, plant-based eating hits the sweet spot between wanting to be healthy, responsible and “hip”. Both veganism and plant-based recipes rank high on the list of most discussed topics on social media in 2020, indicating that plant-based eating is very trendy at the moment. Consumers are increasingly looking for plant-based substitutes in supermarkets and other food outlets. In bakeries and pastry shops they want to find guilt-free indulgences in the shape of plant-based sweets and chocolates. These treats contain no butter, cream or eggs. Instead, substitutes like oil, dairy alternatives and fruit or flaxseed are used to achieve the right texture. •

2021 FEATURE PLANNING

1 SPRING - Bakery China Special Issue

Deadlines:
Ad/editorial - 26.03
Publishing - 12.04

TECHNOLOGY

Hybrid ovens
Software support & operation

PROCESS

Dough dividing and forming
Sanitation

INGREDIENTS AND NUTRITION

Dough improvers
Shelf-life optimization

PACKAGING

Packaging designs

MARKET TRENDS

Flavor trends in China's bakery

SNACKS

Steamed buns

TRADE SHOWS

Bakery China, Anufood China, The Baking Industry Trade Show, Anuga FoodTec, Sweets & Snacks Expo

2 SUMMER

Deadlines:
Ad/editorial - 02.07
Publishing - 19.07

TECHNOLOGY

Trays, tins, racks
Proofers

PROCESS

Vacuum cooling
Inspection & monitoring

INGREDIENTS AND NUTRITION

Oils & fats
Allergens

PACKAGING

Automation in multi-product packaging lines

MARKET TRENDS

East Asia's bakery flavors

SNACKS

Biscuits NPD
Boiled, steamed and fried specialties in Asia

TRADE SHOWS

FIPAN Brazil, Fi Asia

3 AUTUMN - IBA special issue

Deadlines:
Ad/editorial - 03.09
Publishing - 20.09

TECHNOLOGY

Conveyors, belts
Turnkey lines for snacks

PROCESS

Baking wafers
Extrusion

INGREDIENTS AND NUTRITION

Plant-based opportunities
Flour mixes

PACKAGING

Robotics

MARKET TRENDS

Flatbreads in India

SNACKS

Crackers, pretzels & extruded snacks

TRADE SHOWS

iba, Anuga

4 WINTER

Deadlines:
Ad/editorial - 22.11
Publishing - 07.12

TECHNOLOGY

Flexible lines
Industry 4.0: process control systems

PROCESS

Mixing choices
Laminating dough

INGREDIENTS AND NUTRITION

Flavors

PACKAGING

Packaging for product safety

MARKET TRENDS

Market drivers in Australia & Japan's bread ranges

SNACKS

Savory pies

TRADE SHOWS

2022 events

In addition to the listed features, the publications will include regular features on bakeries, training, industry associations, company profiles, expert views, business and regulations, CEO interviews, professional competitions, mapping test centers, as well as facility walk-throughs and operational presentations.

2021 SUBSCRIPTION PACK



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